

CLAIMS

- 1/ A swirling effect nozzle having substance feed channels opening out into a swirling chamber communicating with an outlet orifice, wherein the ratio A_p/A_o is less than or equal to 0.5 and the ratio $A_p/(D_s.d_o)$ is less than or equal to 0.2; where:
- A_p is the smallest total section offered by the channels to the passage of the substance;
- A_o is the section of the outlet orifice;
- d_o is the diameter of the outlet orifice; and
- D_s is the diameter of the swirling chamber.
- 2/ A nozzle according to claim 1, wherein the ratio L_s/D_s is less than or equal to 0.25; where:
- L_s is the length of the portion of the swirling chamber parallel to the axis of the nozzle and measured along the axis of the nozzle.
- 3/ A nozzle according to claim 1, having a plurality of channels, preferably two to six channels, and more preferably still four channels.
- 4/ A nozzle according to claim 1, wherein the ratio A_p/A_o is less than or equal to 0.4, advantageously less than or equal to 0.3, preferably lies in the range 0.15 to 0.35, and more preferably lies in the range 0.2 to 0.3.
- 5/ A nozzle according to claim 1, wherein the ratio $A_p/(D_s.d_o)$ is less than or equal to 0.15, preferably lies in the range 0.1 to 0.15, and more preferably lies in the range 0.11 to 0.14.
- 6/ A nozzle according to claim 1, wherein the ratio L_s/D_s is less than or equal to 0.2, is preferably less than or

equal to 0.15, and more preferably lies in the range 0.1 to 0.15.

7/ A nozzle according to claim 1, wherein the outlet
5 orifice is circularly cylindrical and connects to the swirling chamber via a tapering chamber that converges towards the outlet.

8/ A nozzle according to claim 1, wherein d_o lies in the
10 range 0.4 mm to 1.2 mm, and preferably in the range 0.6 mm to 0.8 mm;
where:

d_o is the diameter of the outlet orifice.

9/ A nozzle according to claim 1, wherein L_s lies in the
15 range 0.1 mm to 0.2 mm;
where:

L_s is the length of the portion of the swirling
chamber parallel to the axis of the nozzle as measured
20 along said axis.

10/ A nozzle according to claim 1, wherein D_s lies in the
range 0.6 mm to 1.4 mm, preferably in the range 0.8 mm to
1.2 mm, and is more preferably close to 1 mm;
25 where:

D_s is the diameter of the swirling chamber.

11/ A dispenser head, including a nozzle as defined in
claim 1.

30 12/ A head according to claim 11, wherein the nozzle is engaged on a center post.

13/ An aerosol receptacle, including a nozzle as defined
35 in claim 1.

14/ A receptacle according to claim 13, containing a liquefied propellant gas.

5 15/ A receptacle according to claim 13, containing a propellant gas constituted by a non-liquefied compressed gas, preferably compressed air.

16/ A receptacle according to claim 14, containing a cosmetic.

10

17/ A receptacle according to claim 16, wherein said cosmetic is a hair spray.

15

18/ A receptacle according to claim 16, wherein the cosmetic is a deodorant.

20

19/ A receptacle according to claim 14, wherein the mean droplet size of the spray, when the receptacle is full and at 20°C, lies in the range 30 μm to 100 μm , preferably lies in the range 40 μm to 80 μm , and more preferably still is close to 60 μm .

25

20/ A receptacle according to claim 14, wherein the flow rate, when the receptacle is full and at 20°C, lies in the range 0.3 g/s to 1.5 g/s, and preferably lies in the range 0.4 g/s to 1 g/s.

30

21/ A receptacle according to claim 14, wherein the puff force, measured at 20°C and when the receptacle is full, is less than or equal to 0.05 N, and is preferably close to 0.025 N.

35

22/ A receptacle according to claim 14, wherein the pressure inside the receptacle, when it is full and at 20°C, lies in the range 2 bars to 6 bars.